

DRAWINGS:

The attached sheets of drawings (1/6, 2/6, 3/6, 4/6, and 5/6) include changes to Figures 1-5, replacing the corresponding original drawing sheets.

REMARKS:

By the above amendment, Applicants have amended the drawings to include text descriptions of elements shown with rectangular boxes in Figures 1-5, in response to the Examiner's objection in the last Office Action. Also, Applicants have rewritten all claims to define the invention more particularly and distinctly so as to define the invention patentability over the prior art.

The invention as defined in claims 35-44 and 56-67 combines a portable user interface operating while disconnected from a network, and buffered data exchanges with a network via a temporary wired connection to a multiuser messaging node. This produces the novel and unforeseen benefit of allowing personal messaging in a circumstance where an individual user cannot afford neither an individual wired network connection nor wireless technology for a portable messaging unit. Such an outcome is not envisioned by Stewart, where wireless communication with geographically distributed access points permit mobile communications without the inconvenience of personally visiting messaging node equipment and establishing a physical connection to the node. For the same reason, the invention is distinguished from Bluetooth and all other wireless access point systems.

The invention as defined in claims 45-59 is further distinguished from Stewart through proactive buffering at messaging nodes, not elsewhere in the network, so that messages may be available for download from an access point even if that access point is disconnected from the rest of the network. This matter is discussed in more detail below, in relation to claim 45.

The invention as defined in all claims is further distinguished from the prior art by firmware-controlled messaging user interface operations in the portable messaging unit, not software-

controlled portable devices (e.g. laptop computers). Conventional firmware portable messaging devices use wireless networking to permit mobile messaging operations. The present invention produces novel and unforeseen benefits, such as reduced production costs, by the omission of both wireless communications technology and software processing capability. Dedicated firmware and non-wireless communications are both cheaper to produce, but this combination has not been previously proposed for messaging system portable messaging units as defined herein.

Claim 35 (rewritten claim 3)

Claim 3 has been rewritten in independent form as claim 35. In the last Office Action, claim 3 was rejected as being unpatentable over Stewart U.S. Patent 5,969,678. Applicants request reconsideration of this rejection, as now applicable to independent claim 35.

In addition, claim 35 has been rewritten to more clearly define that user interface functions can be performed when the portable messaging unit is outside the range of all messaging nodes, and disconnected from the network.

Claim 35 relates particularly to the portion of the patent application in paragraph 174, and in part recites "docking means for establishing a temporary physical connection at any of a plurality of docking ports between a messaging node and a portable messaging unit". Stewart does not do this. Stewart establishes data connectivity through wireless networks, a mode of operation requiring relatively expensive components in the portable messaging units for conducting radio transmissions that can span the distance to an access point.

The present invention, as defined in claim 3, offers the novel and unforeseen benefit of allowing a) message composition at any location while disconnected from a network, b) allowing data

exchanges at a minimum cost by not using radio transmission components within portable messaging units, while c) still allowing multiple concurrent dockings at a messaging node to boost throughput. Factor (b) reduces the effective operating cost of a messaging system with portable messaging devices with respect to conventional wireless systems such as Stewart.

Dependent Claims 36-44

Dependent claims 36-44 incorporate all the subject matter of claim 35 and add additional subject matter which makes them a fortiori and independently patentable over these references.

Claim 36

New claim 36 additionally recites "microswitch means for detecting the physical connection of said messaging node and said portable messaging unit within said docking port for initiating said data exchange." This relates particularly to the portion of the patent application in paragraph 174.

Claim 37

New claim 37 additionally recites that the "user interface functions of said portable messaging unit, including the composition and viewing of messages, are disabled while said portable messaging unit is in said docking port."

A division between user interface activity and communications activity in an embodiment of the present invention is described in paragraph 10,

"... it is advantageous to split the user interface activity from other computer

functions, such as operating a TCP/IP stack and having access to external communications means. A truly basic user interface for a messaging system places sophisticated communications means on dedicated messaging nodes capable of serving a large user base, and places user interface functions on portable messaging units with only minimal communications means sufficient for data exchanges ..."

When a data exchange is complete, the portable messaging unit should be removed from the docking port to ensure a rapid turnover of users, as seen in paragraphs 178 and 111:

"At the end of a data exchange 90, status light 32 is illuminated to indicate that the user may remove portable messaging unit 40 from docking ports 26."

"... messaging node 20 facilitates a large throughput of users, who may quickly exchange data via docking ports 26 and vacate messaging node 20, making room for additional users."

The nature of this brief data exchange at a docking port is further illustrated in Figure 6. In summary, an important aspect of the present invention is the separation of user interface activity from the computer system (messaging node) capable of communications with an outside network. User interface activity for composing and reading messages is done while a user is not occupying a communications resource, that is, when the portable messaging unit is not in a docking port.

This has the novel and unexpected benefit of allowing a vastly higher volume of users to communicate with an external network, given a messaging node lacking wireless communications technology, than would be possible if users consumed user interface resources

at the messaging node itself (as is commonly done in Internet cafes, for example). This problem with conventional solutions is described in paragraph 6:

"In conventional messaging systems permitting remote access by proximate physical access to a plurality of geographically dispersed, publicly available messaging nodes, such as Internet cafes, the factor limiting computer throughput efficiency is user interface activity at the computer terminals provided at said messaging nodes. For example, in a computer configured for e-mail access, the limiting factor is user interface time for reading and writing messages. The computer's other functions, such as communicating with an e-mail server, consume a relatively minor amount of time. The requirement that the messaging node provide the user interface functions for a messaging system imposes an undesirable inefficiency in such messaging nodes."

The present invention, as defined in claim 37, removes this undesirable inefficiency.

Claims 38-44

Claims 38-44 are rewritten from original claims 8, 9, 10, 4, 5, 12 and 7, respectively. Claims 38-40 have been amended to indicate that communications between the portable messaging unit and messaging node occur within the docking port. In addition, claim 35 (discussed above) has replaced original claim 13 as the base claim in all of claims 47-56 as rewritten, introducing additional limitations originally presented within claim 3.

Claim 44, as rewritten, is substantially similar to original claim 7, with additional limitations as discussed above. Claim 44 recites, in part, that "the transfer of data between a portable messaging unit and any other type of electronic device requires that said transfer of data be

conducted via said data exchange with said messaging node." Stewart does not do this. Stewart envisions communication between a portable messaging unit and external electronic devices through access points, but does not exclude the possibility that some electronic communication might occur *without* going through an access point.

Claim 45 (rewritten claim 16)

Claim 16 has been rewritten in independent form as claim 45. In the last Office Action, claim 16 was rejected as being unpatentable over Stewart U.S. Patent 5,969,678. Applicants request reconsideration of this rejection, as now applicable to independent claim 45.

The rejection indicated that Stewart discloses a messaging node proactively buffering incoming messages "where buffering occurs within the information providers which is in communication with the access point".

The applicants' invention, as defined by claim 45, comprises much more than merely buffering an incoming message at an information provider in communication with an access point. Specifically, claim 13 includes the "step of said messaging node proactively buffering incoming messages".

This has the novel and unforeseen benefit of ensuring that messages are available for download from an access point *even when the communications link between the access point and the information provider is broken*. If messages are proactively buffered at an information provider only "in communication with" the access point, as in Stewart, the messaging system will fail if that communications link is broken. Applicants' invention, unlike Stewart, will continue to perform in this situation.

When applicants state in claim 45 that *the messaging node* proactive buffers, this is exactly what applicants mean. Buffering at a remote information provider, as in Stewart, falls outside the scope of this claim. In paragraph 105, it is clear that proactive buffering is performed *at the messaging nodes* specifically, and *not* within the information providers in communication with the access point:

"To provide reliable communications in a network environment where network connections may not be available upon demand, messaging system 10 proactively buffers incoming messages at messaging nodes selected from messaging nodes 14 where a user may be expected to request the collection of incoming messages. This requires foresight on the part of central server 12, to ensure that messages are delivered proactively during communications sessions with selected members of messaging nodes 14."

Proactively buffering messages at a computer "in communication with" the access point cannot even fulfill the function of the invention described in paragraph 126:

"... in a network environment with unreliable or intermittent communications, it may be essential to proactively buffer network data locally, for use at times when the data would otherwise be inaccessible."

Indeed, as indicated in paragraph 212, when

"... first communications link 70 is presumed to be reliable and continuously available ... the special requirement for proactive buffering of incoming messages at messaging node 20 does not apply."

(The "communications link" mentioned corresponds to the link between the access point and an information provider.)

In summary, claim 45 (and consequently dependent claims 46-59) describes proactively buffering messages at a messaging node (what Examiner describes as an access point). Stewart does not do this. Stewart may buffer messages at an information provider in communication with an access point, but Stewart does not proactively buffer messages at an access point. Proactive buffering at an access point has novel and unforeseen benefits, especially when the communications link between an access point and an information provider is unreliable or intermittent. Proactive buffering at an access point is not equivalent to proactive buffering at an information provider.

Dependent Claims 46-59

Dependent claims 46-59 incorporate all the subject matter of claim 45 and add additional subject matter which makes them a fortiori and independently patentable over these references.

Claims 46-55

Claims 46-55 are rewritten from original claims 14, 15, 18, and 20-26, respectively. Claim 54 (formerly 25) has been rewritten to correct a typographic error noted by the Examiner, and claims 49-52 have been rewritten to correctly indicate that these are method, not means, claims. In addition, claim 45 (discussed above) has replaced original claim 13 as the base claim in all of claims 46-55 as rewritten, introducing additional limitations originally presented within claim 16.

Claims 56-58

Claims 56-58 are new claims relating particularly to the portion of the patent application in paragraph 174. Claim 56 additionally recites, in part, "establishing a physical connection at a messaging node docking port." Claims 57-58 are dependents to claim 56. Claim 57 additionally recites, in part, "detecting a microswitch closure within said docking port indicating the commencement of said physical connection." Claim 58 additionally recites, in part, that "establishing a physical connection at a messaging node docking port includes the physical insertion of said portable messaging unit into a recessed space within the physical structure of said messaging node."

Paragraph 174 states, in part,

"At the start of data exchange 90, at step 91, CPU 28 detects the placement of a portable messaging unit 40 in one of docking ports 26. This detection may comprise noticing an infrared signal from portable messaging unit 40, or a physical contact with a microswitch."

In one embodiment, illustrated in Figure 2, docking ports (26) are shown as a recessed space within the distribution interface (24) of a messaging node (20). Such a configuration permits a stable platform for data exchange, where wire connections are less susceptible to wear, and infrared connections are shielded from interference due to background or ambient light.

Claim 59

New claim 59 additionally recites, in part, that "proactively buffered messages are delivered from said messaging node to said portable messaging unit while said messaging node is disconnected from communications with the rest of said messaging system." See the discussion for claim 45 regarding the location, time ordering and function of proactive buffering at a messaging node.

Claim 60 (rewritten claim 27)

Claim 27 has been rewritten as claim 60 for several reasons:

a) The step of "transporting said portable messaging unit to the immediate proximity of a messaging node" has been more narrowly defined as "establishing a temporary physical connection between said portable messaging unit and a messaging node at a docking port subsequent to the storage of said outgoing message within said portable messaging unit". This distinguishes from Stewart, where communications between portable messaging units and access points are conducted via radio communications.

b) The steps of message composition and storage in a portable messaging unit have been more clearly defined as happening while not in communications with an access point.

c) The claim has also been rewritten to correct a typographic error noted by the Examiner, specifically the substitution of a period for a comma within the text of the claim.

Novel and unforeseen benefits of the invention as defined in claim 60 are presented earlier in this document.

Dependent Claims 60-65

Dependent claims 60-65 incorporate all the subject matter of claim 60 and add additional subject matter which makes them a fortiori and independently patentable over these references.

Claim 61 additionally recites that "the step of establishing a physical connection between said portable messaging unit and a messaging node at a docking port further comprises closing a microswitch within said docking port, indicating the establishment of a physical connection and initiating data communications between said portable messaging unit and said messaging node." This claim relates particularly to the portion of the patent application in paragraph 174.

Claims 28-30 and 33 are rewritten as claims 62-65, respectively, under new base claim 60 (rewritten from the original base claim 27). Claims 63-64 are further amended to indicate that communications occur within the docking port of the parent claim.

Claim 66 (rewritten claim 34)

Claim 27 has been rewritten as claim 66, so that the step of detecting "the presence of a portable messaging unit in an immediate proximity" has been narrowed to detecting "insertion of a portable messaging unit into a docking port within said messaging node". This relates particularly to the portion of the patent application in paragraph 174. Claim 66 has also been rewritten to define that outgoing messages sent to a messaging node are composed before the portable messaging unit is inserted into the docking port.

New claim 67 recites all the subject matter of claim 66, and additionally recites "the step of detecting insertion of said portable messaging unit into said docking port comprises detecting closure of a microswitch within said docking port." This also relates particularly to the portion of the patent application in paragraph 174.

New claim 68 recites all the subject matter of claim 66, and additionally defines the docking port as a recessed space within the physical structure of the messaging node. This configuration was discussed previously in relation to claim 58.

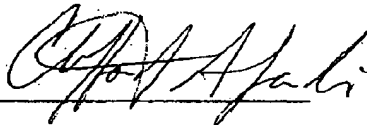
CONCLUSION

For all the above reasons, Applicants submit that the specification and claims are now in proper form, and that the claims all define patentability over the prior art. Therefore they submit that this application is now in condition for allowance, which action they respectfully submit.

Conditional Request for Constructive Assistance

Applicants have amended the claims of this application so that they are proper, definite, and define novel structure which is unobvious. If, for any reason this application is not believed to be in full condition for allowance, applicants respectfully request the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. § 2173.02 and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very respectfully,

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